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NOTICE OF REASONS FOR REFUSAL

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Patent application number	Patent application 2003-294994
Date of issue	Heisei 20 June 6
Patent office examiner	Kazuo Nakamura 3324 3S00
Patent applicant attorney	Hidekazu Miyoshi (& 3 others)
Applied article	Section 29 (2)

This application is to be refused for the following reasons. If there are any arguments regarding this, please submit a statement of arguments within sixty days from a delivery date of this notice.

Reasons

A patent shall not be granted for the invention related to the following claims of this patent application according to the provision of the Patent Law Section 29 (2) because the invention is an invention that could easily have been made, prior to the filing of the patent application, by a person with ordinary skill in the art to which the invention pertains, on the basis of an invention or inventions which were described in a distributed publication or made available to the public through electric telecommunication lines in Japan or elsewhere prior to the filing date of the patent application.

Note

(regarding cited documents etc., see the list of cited documents etc.)

- Claims: 1-9
- Cited documents etc. 1-7
- Remarks

In a multi-layer wiring board shown in the cited document 1 wherein at least two base materials with a wiring circuit are laminated on a motherboard printed wiring board, the motherboard printed wiring board and the laminated base materials are electrically connected to each other through an inner via hole, one of ordinary skill in the art could easily have reached to: decrease an area of an upper base material in the laminated based materials such that inside the contour of a first base material laminated

with the motherboard printed wiring board the contour of a second base material laminated with the first base material is positioned as shown in the cited document 2; and use a base material with a single-sided wiring circuit as each of the base materials as shown in the cited document 3.

Further, the cited documents 3 and 4 show an arrangement that base materials with a wiring circuit are arranged respectively with island shapes on a motherboard printed wiring board, and the cited documents 3 and 5 show a cover layer formed on the motherboard printed wiring board. Furthermore, it is a design matter for one of ordinary skill in the art to select a concrete material of an insulated layer of the motherboard printed wiring board.

Moreover, the cited document 3 shows the steps of: preparing a resin plate for a base material with a single-sided wiring circuit; forming a circuit portion on one side of the resin plate; forming a via hole to penetrate the resin plate; filling the via hole with conductive paste; and dividing into a plurality of base materials with a single-sided wiring circuit. Also, it is a well-known technique to pre-cure the conductive paste in filling the via hole of the base material with a single-sided wiring circuit with the conductive paste; and to cure the conductive paste in laminating by a collective press (refer to the cited documents 6, 7, etc.).

#### List of cited documents etc.

1. Japanese Patent Application Laid-open H4-35092
  2. Microfilm of Japanese Utility Model Application S62-43358 (Japanese Utility Model Application Laid-open S63-149561)
  3. Japanese Patent Application Laid-open 2003-229665
  4. Japanese Patent Application Laid-open 2000-156564
  5. Japanese Patent Application Laid-open H7-135375
  6. Japanese Patent Application Laid-open H4-94186
  7. Japanese Patent Application Laid-open 2003-92473
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If you have any questions about Notice of Reasons for Refusal or you hope to conduct interview with the Examiner, please contact Mr. Kazuo Nakamura (TEL: 03-3581-1101; Extension Number: 3389) belonging to the Second Section of the Japanese Patent Examination (in the field of the carriage assembly).

## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : FUJIKURA LTD

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(54) MULTILAYER WIRING BOARD AND METHOD FOR MANUFACTURING THE SAME

(57)Abstract:

**PROBLEM TO BE SOLVED:** To a multilayer wiring board which can obtain higher wiring flexibility, can reduce a material cost, attain a reduced board capacity, and have high bending resistance strength (peel resistance strength), and a method for manufacturing the wiring board.

**SOLUTION:** At least two substrates among substrates 21A, 21B and 21C, outer shapes of which are previously processed and which have single-side wiring circuits, are bonded to a printed circuit motherboard 10, and the substrates are electrically connected at least at one location via an inner via. Outer shapes of the substrates 21A, 21B and 21C are smaller than the outer shape of the motherboard 10. The substrates 21A, 21B and 21C form an island when stacked on the motherboard 10 in a pyramid.

